

Translation

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05 MAY 2005

PCT/JP2003/013796

PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 03R00932	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2003/013796	International filing date (day/month/year) 28 October 2003 (28.10.2003)	Priority date (day/month/year) 06 November 2002 (06.11.2002)
International Patent Classification (IPC) or national classification and IPC F21V 8/00, F21Y 103:00, G02F 1/13357, G02B 5/30, 6/00		
Applicant SHARP KABUSHIKI KAISHA		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒ Box No. I Basis of the report

☐ Box No. II Priority

☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

☒ Box No. IV Lack of unity of invention

☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

☐ Box No. VI Certain documents cited

☐ Box No. VII Certain defects in the international application

☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 08 April 2004 (08.04.2004)	Date of completion of this report 26 October 2004 (26.10.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ The international application as originally filed/furnished
- ☐ the description:
pages _____, as originally filed/furnished
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ the claims:
pages _____, as originally filed/furnished
pages* _____, as amended (together with any statement) under Article 19
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ the drawings:
pages _____, as originally filed/furnished
pages* _____ received by this Authority on _____
pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees the applicant has:
 - ☐ restricted the claims.
 - ☒ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
 - ☐ complied with.
 - ☒ not complied with for the following reasons:
SEE SUPPLEMENTAL SHEET
4. Consequently, this report has been established in respect of the following parts of the international application:
 - ☒ all parts.
 - ☐ the parts relating to claims Nos. _____

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: IV. 3.

The feature common to independent claims 1, 3 and 31 to 34 is "a light guide having an incident surface for receiving light emitted from a light source and an output surface for outputting light which has entered via the incident surface, wherein said light guide has a polarization selection layer and a polarization conversion layer".

Said common feature clearly lacks novelty, as disclosed in JP 09-5739 A ((International Business Machines Corporation), page 4, right column, line 24 to page 7, left column, line 22; fig. 5 to 8) cited in the international search report. As a consequence, said feature does not make a contribution over prior art, and is therefore not a special technical feature within the meaning of PCT Rule 13.2, second sentence.

Therefore, there is no technical relationship between claims 1, 3 and 31 to 34 within the meaning of PCT Rule 13.2, hence these inventions clearly do not satisfy the requirement of unity of invention.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	4-11, 13, 16-17, 23-25, 30, 33-34	YES
	Claims	1-3, 12, 14-15, 18-22, 26-29, 31-32	NO
Inventive step (IS)	Claims	4-11	YES
	Claims	1-3, 12-34	NO
Industrial applicability (IA)	Claims	1-34	YES
	Claims		NO

2. Citations and explanations

Document 1: JP 09-5739 A (International Business Machines Corporation), 10 January 1997

Document 2: JP 2001-507483 A (Koninklijke Philips Electronic N.V.), 5 June 2001

Document 3: JP 2001-264698 A (Mitsubishi Electric Corporation), 26 September 2001

Document 4: JP 10-20125 A (Nitto Denko Corporation, Hitachi, Ltd.), 23 January 1998

Document 5: JP 2002-71965 A (Nitto Denko Corporation), 12 March 2002

Document 6: JP 09-134607 A (Sharp Corporation), 20 May 1997

Document 7: JP 2001-60063 A (Sharp Corporation), 6 March 2001

The inventions set forth in claims 1 to 3, 12, 14 and 15, 18 to 22, 26 to 29, 31 and 32 lack novelty and do not involve an inventive step.

Claims 1 to 3, 12, 14, 28, 31 and 32

The lighting device set forth in document 1 (page 4, right column, line 24 to page 7, left column, line 22; fig. 5 to 8) cited in the international search report comprises a light guide provided with a polarization

conversion layer and a polarization selection layer containing a plurality of dielectric films, and said plurality of dielectric films becomes increasingly dense as distance from the incident surface increases.

Claim 26

The lighting device set forth in document 2 (page 8, line 11 to page 9, line 6; fig. 1) cited in the international search report comprises a polarization selection layer and a polarization conversion layer, and the polarization conversion layer is positioned on the opposite side of the light-emitting surface from the polarization selection layer.

Claims 15, 18 to 22 and 29

The lighting device set forth in document 4 (page 6, left column, lines 18 to 48; page 7, left column, line 11 to right column, line 26; page 8, left column, lines 37 to 41; fig. 8) cited in the international search report has a polarization selection layer and a polarization conversion layer comprising a phase change plate, and said phase change plate has uniaxial anisotropy.

Claim 27

The lighting device set forth in document 6 (page 4, left column, line 32 to right column, line 35; fig. 1) has a polarization selection layer and a polarization conversion layer, and the polarization conversion layer is positioned on the light-emitting surface side with respect to the polarization selection layer.

The inventions set forth in claims 13, 16 and 17, 23 to 25, 30, 33 and 34 do not involve an inventive step.

Claims 13, 16 and 33

Document 2 (page 8, line 11 to page 9, line 6; fig. 1) cited in the international search report does not indicate that a polarization conversion layer is formed by injection molding.

However, said feature is disclosed in document 3 (page 4, right column, lines 1 to 6) cited in the international search report.

Claims 17 and 34

Document 4 (page 6, left column, lines 18 to 48; page 7, left column, line 11 to right column, line 26; page 8, left column, lines 37 to 41; fig. 8) cited in the international search report does not describe a relation between the delay phase axis and the advance phase axis of the phase change plate and the specific polarization direction of the polarization selection layer.

However, it would be obvious to a person skilled in the art to optimize the relation with a layer having anisotropy.

Claims 23 to 25

Document 4 (page 6, left column, lines 18 to 48; page 7, left column, line 11 to right column, line 26; page 8, left column, lines 37 to 41; fig. 8) cited in the international search report sets forth a feature wherein a phase change plate having biaxial refractive index anisotropy is used.

However, said feature is disclosed in document 5 (page 7, right column, lines 6 to 19) cited in the international search report.

Claim 30

Document 1 (page 4, right column, line 24 to page 7, left column, line 22; fig. 5 to 8) cited in the

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international search report does not disclose a feature wherein a light guide plate also serves as a display panel.

However, said feature is disclosed in document 7 (page 7, right column, lines 39 to 41; fig. 10) cited in the international search report.

The invention set forth in claims 4 to 11 is novel and involves an inventive step.

None of the documents cited in the international search report sets forth a feature wherein a light guide is formed of first and second members having a plurality of sloped surfaces, and a dielectric film is formed on a plurality of sloped surfaces, and said feature would not be obvious to a person skilled in the art.